

EXHIBIT 20

**504735685 01/18/2018
PATENT ASSIGNMENT COVER SHEET**

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Stylesheet Version v1.2

EPAS ID: PAT4782411

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
NOKIA TECHNOLOGIES OY	12/22/2017

RECEIVING PARTY DATA

Name:	WSOU INVESTMENTS, LLC
Street Address:	11150 SANTA MONICA BLVD.
Internal Address:	SUITE 1400
City:	LOS ANGELES
State/Country:	CALIFORNIA
Postal Code:	90025

PROPERTY NUMBERS Total: 101

Property Type	Number
Patent Number:	7890100
Patent Number:	7484240
Patent Number:	7213072
Patent Number:	7203505
Patent Number:	6484020
Patent Number:	7355590
Patent Number:	6617522
Patent Number:	7617542
Patent Number:	7103374
Patent Number:	8023966
Patent Number:	6580771
Patent Number:	6574457
Patent Number:	6829758
Patent Number:	7716137
Patent Number:	6842627
Patent Number:	6950680
Patent Number:	7224945
Patent Number:	6934564
Patent Number:	8108520

PATENT

REEL: 045084 FRAME: 0282

Property Type	Number
Patent Number:	7426187
Patent Number:	6750791
Patent Number:	7236191
Patent Number:	9077516
Patent Number:	7304563
Patent Number:	7206547
Patent Number:	7072695
Patent Number:	9805400
Patent Number:	7796951
Patent Number:	8209411
Patent Number:	7584244
Patent Number:	9084178
Patent Number:	7548945
Patent Number:	8111742
Patent Number:	7843974
Patent Number:	7242364
Patent Number:	7813444
Patent Number:	7376299
Patent Number:	8583090
Patent Number:	7116765
Patent Number:	7124189
Patent Number:	6671703
Patent Number:	8069315
Patent Number:	7924788
Patent Number:	7979091
Patent Number:	7782261
Patent Number:	8051387
Patent Number:	8229286
Patent Number:	7856246
Patent Number:	7813924
Patent Number:	8010138
Patent Number:	7937051
Patent Number:	8189532
Patent Number:	8391881
Patent Number:	7984486
Patent Number:	8571160
Patent Number:	8281211
Patent Number:	8149776

Property Type	Number
Patent Number:	8818448
Patent Number:	8103213
Patent Number:	8315278
Patent Number:	8331468
Patent Number:	8147071
Patent Number:	8180401
Patent Number:	8294688
Patent Number:	8977717
Patent Number:	8780134
Patent Number:	8862088
Patent Number:	8359075
Patent Number:	8452784
Patent Number:	8624759
Patent Number:	9313598
Patent Number:	9335825
Patent Number:	9047744
Patent Number:	8874585
Patent Number:	9264957
Patent Number:	8849241
Patent Number:	9344997
Patent Number:	8515409
Patent Number:	9300472
Patent Number:	8681181
Patent Number:	9081703
Patent Number:	9203609
Patent Number:	9009178
Patent Number:	9257098
Patent Number:	9098420
Patent Number:	9258644
Patent Number:	9350533
Patent Number:	9509835
Patent Number:	9798695
Patent Number:	9432854
Patent Number:	7353048
Application Number:	12401062
Application Number:	13102671
Application Number:	14241421
Application Number:	13659351

Property Type	Number
Application Number:	13875419
Application Number:	14193689
Application Number:	14188745
Application Number:	15525562
Application Number:	12940685
Application Number:	12827558

CORRESPONDENCE DATA**Fax Number:**

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

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NAME OF SUBMITTER:	KRIS PANGAN
SIGNATURE:	/Kris Pangan/
DATE SIGNED:	01/18/2018

Total Attachments: 9

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SCHEDULE G5: ASSIGNMENT OF PATENT RIGHTS**BY NOKIA TECHNOLOGIES OY****PATENT ASSIGNMENT**

This **PATENT ASSIGNMENT**, including without limitation **Exhibit A** of this **Schedule G5**, ("Assignment") is made by:

- (1) **Nokia Technologies Oy**, a company validly organized and existing under the laws of Finland and having its principal address at Karaportti 3, 02610 Espoo, Finland, ("Assignor"); to
- (2) **WSOU Investments LLC** a company validly organized under the laws of Delaware, having its principal address at 11150 Santa Monica Boulevard, Suite 1400 Los Angeles, CA 90025, (the "Assignee"),

All references to the plural herein also mean the singular, and vice versa, unless the context otherwise requires.

WHEREAS, Assignor is the owner of certain patents and patent applications, as specified in **Exhibit A** hereto.

DEFINITIONS

"Assigned Patents" means (a) patent applications listed in **Exhibit A** of this **Schedule G5**; (b) all reissues, reexaminations, continuations, continuations-in-part, divisionals, renewals and extensions of such patents and patent applications (whether pending, issued, abandoned or filed prior to, on or after the Effective Date); (c) all patents and patent applications (i) to which any or all of the foregoing directly or indirectly claims priority to, or the benefit of, the filing date, or (ii) for which any or all of the foregoing directly or indirectly forms a basis for priority or otherwise provides the benefit of an earlier filing date; and (d) all foreign counterparts to any or all of the foregoing, and all utility models, certificates of invention, patent registrations and equivalent rights worldwide.

"Assignment Date" means December 22, 2017.

PATENT ASSIGNMENT

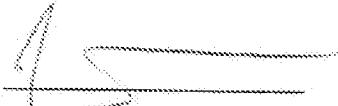
Assignor hereby assigns, transfers, and conveys unto Assignee, all of Assignor's right, title, and interest in and to each of the Assigned Patents.

The assignment, transfer, and conveyance to Assignee set forth above will become effective on the Assignment Date and is made subject to certain encumbrances and retained rights for the Assigned Patents in favor of Assignor and/or its assignees and licensees.

IN WITNESS WHEREOF, the Assignor has caused this Assignment to be signed by its duly authorized officers.

ASSIGNOR:

NOKIA TECHNOLOGIES OY

By: 

Name: Jan Sandström
Title: Director, Legal & Compliance
Date: December 22, 2017

ASSIGNOR:

NOKIA TECHNOLOGIES OY

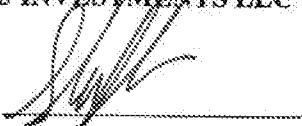
By: 

Name: Hanna Nuortila
Title: Director, Legal & Compliance
Date: December 22, 2017

**ACKNOWLEDGED BY
ASSIGNEE**

ASSIGNEE:

WSOU INVESTMENTS LLC

By: 

Name: STUART S. HARRIS
Title: President
Date: Jan. 9, 2018

Exhibit A

Filing	Case Reference	Patent Number	Application Number	Country	Grant Date	Application Date	Title
16438	16438-US-PCT	7890100	10/512691	US	15-Feb-2011	13-Jun-2003	MSRN ALLOCATION BASED ON B-SUBSCRIBER'S HOME NETWORK
16438	16438-CN-PCT	ZL03812707.5	03812707.5	CN	30-Apr-2008	13-Jun-2003	MSRN ALLOCATION BASED ON B-SUBSCRIBER'S HOME NETWORK
16438	16438-DE-EPT	60343937.3	03730278.3	DE	1-May-2013	13-Jun-2003	MSRN ALLOCATION BASED ON B-SUBSCRIBER'S HOME NETWORK
16438	16438-NL-EPT	1514445	03730278.3	NL	1-May-2013	13-Jun-2003	MSRN ALLOCATION BASED ON B-SUBSCRIBER'S HOME NETWORK
17214	17214-US-NP	7484240	09/9051463	US	27-Jan-2009	13-Jul-2001	A mechanism to allow authentication of terminated SIP calls
17527	17527-US-NP	7213072	09/851527	US	1-May-2007	8-May-2001	Description of permissible transcoding operations on image content.
19140	19140-US-NP	7203505	09/941851	US	10-Apr-2007	30-Aug-2001	TRANSFER OF SMS DELIVERED SYNCML MESSAGES FROM MOBILE STATION TO THIRD DEVICE
22531	22531-US-NP	6484020	09/653393	US	19-Nov-2002	1-Sep-2000	MOVING EAR BUD
22542	22542-US-NP	7355590	10/155956	US	8-Apr-2008	30-Apr-2002	EXPRESS-ON KEYMAT
25779	25779-US-NP	6617522	09/870039	US	9-Sep-2003	30-May-2001	SPECIAL TERMINALS (PINS) FOR THE ELECTRONIC COMPONENTS
26200	26200-US-NP	7617542	10/024224	US	10-Nov-2009	21-Dec-2001	LOCATION BASED CONTENT PROTECTION
28660	28660-US-NP	7103374	10/190143	US	5-Sep-2006	3-Jul-2002	SYNCHRONIZATION OF TRANSMITTER AND RECEIVER FREQUENCIES IN MULTIAccess NETWORKS
28990	28990-US-NP	8023966	11/018027	US	20-Sep-2011	21-Dec-2004	ROAMING AGENT FOR CONTENT DOWNLOAD
29307	29307-US-NP	6580771	09/823897	US	17-Jun-2003	30-Mar-2001	SUCCESSIVE USER DATA MULTIPATH INTERFACE CANCELLATION
29609	29609-US-NP	6574457	09/525782	US	3-Jun-2003	15-Mar-2000	VIRTUALLY DOUBLE BALANCED MIXER
30508	30508-US-NP	6829758	09/617253	US	7-Dec-2004	14-Jul-2000	INTERFACE MARKUP LANGUAGE (IML)
30611	30611-CN-PCT	ZL0218182.4	02818182.4	CN	3-Oct-2007	14-Aug-2002	SYSTEM AND METHOD FOR MESSAGE PROTECTION
30611	30611-US-NP	7716137	10/218198	US	11-May-2010	13-Aug-2002	SYSTEM AND METHOD FOR MESSAGE PROTECTION
31601	31601-CN-NP	ZL03123518.2	03123518.2	CN	20-Jun-2007	9-May-2003	CONTROL METHOD FOR FLIP IN MOBILE PHONES
32253	32253-US-NP	6842627	09/860787	US	11-Jan-2005	18-May-2001	CONTACT AND LOCKING METHOD FOR FLIP CONSTRUCTION
33329	33329-US-NP	6950680	09/955558	US	27-Sep-2005	17-Sep-2001	LIGHTGUIDE CONCEPTS
34806	34806-US-NP	7224945	10/458453	US	29-May-2007	10-Jun-2003	Twix Blendkey
35320	35320-IN-NP	247660	954/MAS/2002	IN	2-May-2011	18-Dec-2002	HINDI INPUT
35320	35320-US-NP	6934564	10/027145	US	23-Aug-2005	20-Dec-2001	HINDI INPUT
36655	36655-US-NP	8108520	10/465159	US	31-Jan-2012	19-Jun-2003	QUALITY OF SERVICE STRATEGIC APPLICATION PROGRAMMING INTERFACE (QOS SAPI)
36946	36946-US-NP	7426187	10/691457	US	16-Sep-2008	21-Oct-2003	FSF DECODING BY SOFTWARE
37002	37002-US-NP	6750791	10/361805	US	15-Jun-2004	7-Feb-2003	A Method of Compressing Case Insensitive Text Data

Exhibit A

Filing	Case Reference	Patent Number	Application Number	Country	Grant Date	Application Date	Title
37002	37002-KR-PCT	732664	2005-7014498	KR	20-Jun-2007	4-Feb-2004	A METHOD OF COMPRESSING CASE INSENSITIVE TEXT DATA
37038	37038-US-NP	7236191	10/426303	US	26-Jun-2007	30-Apr-2003	COLOR FILTER ARRAY INTERPOLATION METHOD
37394	37394-US-PCT	9077516	11/628634	US	7-Jul-2015	18-Jun-2004	REDUCED COMPLEXITY NEAR-OPTIMAL BEAMFORMING FOR MULTIANTENNA OFDM TRANSMISSION
37394	37394-DE-EPT	602004032677.1	04743771.0	DE	11-May-2011	18-Jun-2004	REDUCED COMPLEXITY NEAR-OPTIMAL BEAMFORMING FOR MULTIANTENNA OFDM TRANSMISSION
37394	37394-IN-PCT		364/DELNP/2007	IN		18-Jun-2004	REDUCED COMPLEXITY NEAR-OPTIMAL BEAMFORMING FOR MULTIANTENNA OFDM TRANSMISSION
37394	37394-NL-EPT	1757000	04743771.0	NL	11-May-2011	18-Jun-2004	REDUCED COMPLEXITY NEAR-OPTIMAL BEAMFORMING FOR MULTIANTENNA OFDM TRANSMISSION
37394	37394-TW-NP	1384798	94119764	TW	1-Feb-2013	15-Jun-2005	REDUCED COMPLEXITY NEAR-OPTIMAL BEAMFORMING FOR MULTIANTENNA OFDM TRANSMISSION
39232	39232-US-NP	7304563	10957743	US	4-Dec-2007	5-Oct-2004	DOUBLE ALARM
43349	43349-US-NP	7206547	10/6751414	US	17-Apr-2007	30-Sep-2003	Method of testing electric circuit, and arrangement
43480	43480-US-NP	7072695	10/781044	US	4-Jul-2006	17-Feb-2004	BICYCLE OR CAR CRADLE WITH MECHANICAL SENSING OF PHONE TILT
43790	43790-IN-PCT		5722/DELNP/2006	IN		1-Mar-2005	Over the air download of music scheme
43790	43790-JP-PCT	5042643	2007-501372	JP	20-Jul-2012	1-Mar-2005	Over the air download of music scheme
43790	43790-KR-PCT	835644	2006-7019927	KR	26-Aug-2008	1-Mar-2005	Over the air download of music scheme
43790	43790-RU-PCT	2339075	2006/134476	RU	20-Nov-2008	1-Mar-2005	Over the air download of music scheme
43790	43790-US-NP	9805400	10/792547	US	31-Oct-2017	2-Mar-2004	Over the air download of music scheme
43790	43790-EP-EPT		05708635.7	EP		1-Mar-2005	OVER THE AIR DOWNLOAD OF MUSIC SCHEME
44111	44111-US-NP	7796951	11/251437	US	14-Sep-2010	14-Oct-2005	FM RADIO- AM BAND APPLICATION ENGINE
45159	45159-US-CNT	8209411	12/506642	US	26-Jun-2012	21-Jul-2009	METHOD AND SYSTEM FOR SHARING PC APPLICATION CONTENT WITH MOBILE TERMINALS
45159	45159-US-NP	7584244	10/861595	US	1-Sep-2009	4-Jun-2004	METHOD AND SYSTEM FOR SHARING PC APPLICATION CONTENT WITH MOBILE TERMINALS
45111	45111-US-NP	9084178	11/053981	US	14-Jul-2015	8-Feb-2005	CHANNEL PRESET POLLING IN MOBILE MEDIA NETWORKS
46040	46040-CN-PCT	2.0068E+11	20068014846.4	CN	3-Oct-2012	13-Apr-2006	DOMAIN NAME CLUSTERING
46040	46040-EP-EPT	06727550.3	EP		13-Apr-2006	DOMAIN NAME CLUSTERING	
46040	46040-US-NP	7548945	11/169375	US	16-Jun-2009	29-Jun-2005	DOMAIN NAME CLUSTERING

Exhibit A

Familt	Case Reference	Patent Number	Application Number	Country	Grant Date	Application Date	Title
46757	46757-US-PCT	8111742	11/887826	US	7-Feb-2012	7-Apr-2005	A VERY LOW COMPLEXITY EQUALIZER TAP SOLVER FOR MIMO AND STTD SIGNALS
46757	46757-DE-EP	602005047884.1	05736290.7	DE	11-Nov-2015	7-Apr-2005	A VERY LOW COMPLEXITY EQUALIZER TAP SOLVER FOR MIMO AND STTD SIGNALS
46757	46757-KR-PCT	0984053	2007-7025899	KR	17-Sep-2010	7-Apr-2005	A VERY LOW COMPLEXITY EQUALIZER TAP SOLVER FOR MIMO AND STTD SIGNALS
49340	49340-US-NP	7843974	11/174292	US	30-Nov-2010	30-Jun-2005	Audio-Video Synchronization in See-What-I-See
49570	49570-US-NP	7242364	11/238438	US	10-Jul-2007	29-Sep-2005	DUAL-RESONANT LOW-IMPEDANCE PILA ANTENNA WITH MODIFIED PARALLEL RESONANT MATCHING NETWORK
49874	49874-US-NP	7813444	11/1402636	US	12-Oct-2010	11-Apr-2006	MEASUREMENT METHOD FOR AMPLITUDE AND PHASE SYNCHRONIZATION IN POLAR TRANSMITTERS
49898	49898-US-NP	7376299	11/1313219	US	20-May-2008	19-Dec-2005	OPTICAL TWO CHANNEL ROTARY HINGE
51694	51694-US-NP	8583090	11/617965	US	12-Nov-2013	29-Dec-2006	POSTPONING TASK COMPLETION TO ANOTHER DEVICE
52409	52409-US-CIP	7116765	09/852308	US	3-Oct-2006	11-May-2001	MAPPING AN INTERNET DOCUMENT TO BE ACCESSED OVER A TELEPHONE SYSTEM
52411	52411-DE-EP	60148910.1	01991262.5	DE	16-Jul-2014	19-Dec-2001	SPONTANEOUS VIRTUAL PRIVATE NETWORK BETWEEN PORTABLE DEVICE AND ENTERPRISE NETWORK
52411	52411-EP-PCT	3909289	2002-551723	JP	26-Jan-2007	19-Dec-2001	SPONTANEOUS VIRTUAL PRIVATE NETWORK BETWEEN PORTABLE DEVICE AND ENTERPRISE NETWORK
52411	52411-US-NP	7124189	09/7767465	US	17-Oct-2006	22-Jan-2001	PORTABLE DEVICE AND ENTERPRISE NETWORK
52413	52413-US-NP	6671703	09/887840	US	30-Dec-2003	22-Jun-2001	SYSTEM AND METHOD FOR FILE TRANSMISSION USING SYSTEM AND METHOD FOR FILE DIFFERENTIATION
52413	52413-EP-EP		01952185.5	EP		22-Jun-2001	FILE DIFFERENTIATION
53318	53318-US-NP	8069315	11/848166	US	29-Nov-2011	30-Aug-2007	PARALLEL SCANNING METHOD
533841	533841-US-NP	7924788	11/520654	US	12-Apr-2011	14-Sep-2006	METHOD TO IDENTIFY POTENTIAL MISSING NEIGHBOURS VIA THE PREDICTION OF NEIGHBOUR CELL PERFORMANCE IN CELLULAR NETWORKS
533970	533970-US-NP	7979091	11/469021	US	12-Jul-2011	31-Aug-2006	HALO 2 - CRISS-CROSS MENU SYSTEM
54031	54031-IN-EP		676/DEL/2007	IN		28-Mar-2007	INTUITIVE EDITING FOR BRAHMIC SCRIPTS
54044	54044-US-NP	7782261	11/642342	US	24-Aug-2010	20-Dec-2006	IMA ANTENNA
54044	54044-CN-PCT	2007/80042760.7	2007/80042760.7	CN	15-Jan-2014	20-Dec-2007	IMA ANTENNA
54044	54044-EP-EP		07872085.1	EP		20-Dec-2007	IMA ANTENNA
54044	54044-IN-PCT	270026	1965/CHE/NP/2009	IN	24-Nov-2015	20-Dec-2007	IMA ANTENNA

Exhibit A

Family	Case Reference	Patent Number	Application Number	Country	Grant Date	Application Date	Title
54044	54044-KR-PCT	1150683	2009-7015154	KR	21-May-2012	20-Dec-2007	IMA ANTENNA □
54707	54707-US-NP	8051387	11/822256	US	1-Nov-2011	28-Jun-2007	CORRELATION BASED SPATIAL USER INTERFACE METAPHOR TO AID IN RADIO STATION DISCOVERY
54873	54873-US-NP	8229286	11/690287	US	24-Jul-2012	23-Mar-2007	IMPROVED FAST FORWARDING SPEED
55243	55243-US-NP	7856246	11/726328	US	21-Dec-2010	21-Mar-2007	HIGH-LEVEL ARCHITECTURE FOR TIGHTLY-COUPLED RADIO FREQUENCY SIGNAL PROCESSING VLIW SIMD HYBRID PROCESSOR
56682	56682-US-NP	7813924	11/733329	US	12-Oct-2010	10-Apr-2007	METHOD FOR VOICE CONVERSION DATA COLLECTION
57110	57110-US-NP	8010138	11/893144	US	30-Aug-2011	15-Aug-2007	MAINTAINING MOBILE NETWORK CELL SYNCHRONIZATION IN BTS HOLDOVER MODE
57368	57368-US-NP	7937051	11/974009	US	3-May-2011	11-Oct-2007	TEHONMITTAUSMENETELMGMULTIRADIOTA VARTEN END DEVICE CONTROLLED PROACTIVE TCP MECHANISM FOR INTER-SYSTEM HANDOVER
57488	57488-US-NP	8189532	12/003459	US	29-May-2012	26-Dec-2007	Collaborative means to operate in a radio system with cognitive features
60367	60367-US-NP	8391881	12/012726	US	5-Mar-2013	4-Feb-2008	Extending use of Generic Authentication Architecture for Collaborative means to operate in a radio system with cognitive features
60367	60367-CN-PCT	200980101477.6	200980101477.6	CN	9-Oct-2013	3-Feb-2009	Collaborative means to operate in a radio system with cognitive features
60367	60367-DE-EPT	602009017403.7	09709235.7	DE	24-Jul-2013	3-Feb-2009	Collaborative means to operate in a radio system with cognitive features
60813	60813-US-NP	7984486	11/946459	US	19-Jul-2011	28-Nov-2007	Extending use of Generic Authentication Architecture for entities supporting local and global Mobile IP mobility
61200	61200-US-NP	8571160	12/222107	US	29-Oct-2013	1-Aug-2008	Frequency estimation method for OFDM-systems, primarily WiMAX
63412	63412-US-NP	8281211	12/121631	US	2-Oct-2012	15-May-2008	Joint network coding for multiple-access relay network with imperfect UE-Relay link
64058	64058-US-NP	8149776	12/454053	US	3-Apr-2012	12-May-2009	WCDMA RACH optimization
64221	64221-US-NP	8818448	12/420161	US	26-Aug-2014	8-Apr-2009	CSFallback With User Control
64221	64221-CN-PCT	200980121337.5	200980121337.5	CN	16-Apr-2014	8-Apr-2009	CSFallback With User Control
65164	65164-US-NP	8103213	12/203746	US	24-Jan-2012	3-Sep-2008	Point of use radio for Software Defined Radio computers
65775	65775-US-NP	8315278	12/317591	US	20-Nov-2012	23-Dec-2008	Network synchronization method for distributed wireless network
66250	66250-US-NP	8331468	12/474947	US	11-Dec-2012	29-May-2009	Generation of the Ciclic prefix as a postfix and a time prerotation before the DFT precoding in SCFDMA systems.
66548	66548-US-NP	8147071	12/387313	US	3-Apr-2012	29-Apr-2009	Microprojector UI
67295	67295-BR-PCT	PI1009246.3	BR		4-Mar-2010	On-Demand Song Mapping using external metadata provider	
67295	67295-CN-PCT	201080010961.0	201080010961.0	CN	22-Jul-2015	4-Mar-2010	On-Demand Song Mapping using external metadata provider
67295	67295-EP-EPFT	10750420.1	EP		4-Mar-2010	On-Demand Song Mapping using external metadata provider	
67295	67295-ID-PCT	IDP000045025	W00201103593	ID	7-Mar-2017	4-Mar-2010	On-Demand Song Mapping using external metadata provider
67295	67295-US-NP	12401062	US		10-Mar-2009	On-Demand Song Mapping using external metadata provider	
67295	67295-ZA-PCT	20117277	ZA		4-Mar-2010	On-Demand Song Mapping using external metadata provider	
68035	68035-US-NP	8180401	12/467872	US	15-May-2012	18-May-2009	SIM application toolkit Provide local information terminal temperature

Exhibit A

Famity	Case Reference	Patent Number	Application Number	Country	Grant Date	Application Date	Title
68577	68577-US-NP	8294688	12/387253	US	23-Oct-2012	29-Apr-2009	Dual Touchscreen System
69356	69356-US-NP	8977717	12/486511	US	10-Mar-2015	17-Jun-2009	A mobile content store built using stateless front-ends, scalable caching mechanism and schema-free metadata storage
69623	69623-US-NP	8780134	12/570422	US	15-Jul-2014	30-Sep-2009	TouchTone: Interactive Local Image Adjustment Using Point-and-Swipe
70016	70016-US-PCT	8862088	13/497485	US	14-Oct-2014	22-Sep-2009	Receiver architecture using a transferred impedance polyphase filter in feedback
70016	70016-CNPCT	200980161552.8	200980161552.8	CN	15-Apr-2015	22-Sep-2009	Receiver architecture using a transferred impedance polyphase filter in feedback
70218	70218-US-NP	8359075	12/647675	US	22-Jan-2013	28-Dec-2009	Mobile Device with Transparent Display
70470	70470-US-NP	8452784	12/604154	US	28-May-2013	22-Oct-2009	Method and interface for searching geo-tagged information
70810	70810-US-NP	8624759	12/783464	US	7-Jan-2014	19-May-2010	360deg Navigation Key for Mobile Devices
71520	71520-US-PCT	9313598	13/579561	US	12-Apr-2016	2-Mar-2011	Stereo to Five Channel Upmix using Matrix Factorization
71552	71552-US-NP	9335825	12/693667	US	10-May-2016	26-Jan-2010	Gesture based music volume control using radar
71778	71778-US-NP	9047744	12/722724	US	2-Jun-2015	12-Mar-2010	Wrist straps
72094	72094-US-NP	8874585	12/797284	US	28-Oct-2014	9-Jun-2010	System and Method for User-Based Search in a Distributed Smart Space
72427	72427-CNPCT	2,0108E+11	201080066710.4	CN	13-Apr-2016	10-May-2010	Key derivation during SRVCC from UTRAN/GERAN to EUTRAN/HSPA
72427	72427-US-PCT	9264957	13/696983	US	16-Feb-2016	10-May-2010	Key derivation during SRVCC from UTRAN/GERAN to EUTRAN/HSPA
72427	72427-EP-EPFT		10851202.1	EP		10-May-2010	Key derivation during SRVCC from UTRAN/GERAN to EUTRAN/HSPA
72509	72509-US-NP		12/827558	US		30-Jun-2010	Smart player positioning in multiplayer games
72535	72535-US-NP	8849241	12/824878	US	30-Sep-2014	28-Jun-2010	Mechanism for energy-aware connection and code offloading
73688	73688-US-PCT	9344997	13/879366	US	17-May-2016	13-Oct-2010	Simultaneous cellular and D2D communication in the mixed networks
73740	73740-US-NP		12/940685	US		5-Nov-2010	Mobile Web Automators
74468	74468-US-NP	8515409	12/956901	US	20-Aug-2013	30-Nov-2010	Efficient distributed Publish / Subscribe mechanism in AwareNet
74664	74664-EP-EPFT		11867485.2	EP		9-Jun-2011	Glichless Clock divider with fast clock change
74937	74937-US-NP		13/102671	US		6-May-2011	a gestural UI for automatic switch between the frontal and rear camera
75028	75028-US-NP	9300472	13/249710	US	29-Mar-2016	30-Sep-2011	Method and apparatus for improving digital signatures
75941	75941-CNPCT		201180074320.6	CN		30-Aug-2011	Phonebook based application and content sharing
75941	75941-EP-EPFT		11871557.2	EP		30-Aug-2011	Phonebook based application and content sharing
75941	75941-US-PCT		14/241421	US		30-Aug-2011	Phonebook based application and content sharing
76007	76007-US-NP	8681181	13/217060	US	25-Mar-2015	24-Aug-2011	Compressing visual space to optimize the presentation of information

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Filing	Case Reference	Patent Number	Application Number	Country	Grant Date	Application Date	Title
76174	76174-US-NP	9081703	13/723,537	US	14-Jul-2015	15-Sep-2011	User Mode Host Side USB Sharing Architecture In Multi Domain Computers
76262	76262-US-NP		13/659,351	US		24-Oct-2012	"Pipette tool": method and interface for exchanging information between devices or Cloud
76541	76541-CN-PCT	2,0128E+11	201280061049.7	CN	10-May-2017	5-Dec-2012	A system and method of RF memory tag solution for key hierarchy when using RF memory (e)tags/sticks for key setup
76541	76541-EP-EPT		12857821.8	EP		5-Dec-2012	A system and method of RF memory tag solution for key hierarchy when using RF memory (e)tags/sticks for key setup
76541	76541-US-NP	9203609	13/316932	US	1-Dec-2015	12-Dec-2011	A system and method of RF memory tag solution for key hierarchy when using RF memory (e)tags/sticks for key setup
76871	76871-US-NP	9009178	13/339036	US	14-Apr-2015	28-Dec-2011	METHODS TO DISCOVER TWWS REGULATORY DOMAIN & DB PROTOCOL DIALECT
76874	76874-US-NP	9257098	13/336818	US	9-Feb-2016	23-Dec-2011	Dynamic peep hole into a background application
77044	77044-US-NP	9093420	13/279020	US	4-Aug-2015	21-Oct-2011	Smart cache/intelligent caching.
78142	78142-US-NP	9258644	13/560015	US	9-Feb-2016	27-Jul-2012	Videocamera microphone automatic beamforming based on camera focus distance information
78552	78552-US-NP	9350533	13/602,541	US	24-May-2016	4-Sep-2012	A method for delivering encrypted content to web browsers based upon entropy of that decrypted content
78777	78777-US-PCT	9509835	14/395,261	US	29-Nov-2016	8-May-2012	An Approach of Secure Recognition for Pervasive Face-to-Face Social Communications
78777	78777-CN-PCT		201280073053.5	CN		8-May-2012	An Approach of Secure Recognition for Pervasive Face-to-Face Social Communications
78777	78777-EP-EPT		12876517.9	EP		8-May-2012	An Approach of Secure Recognition for Pervasive Face-to-Face Social Communications
78885	78885-CN-PCT		201280072176.2	CN		7-Aug-2012	Memory access control for executable locking for Wireless Memory
78885	78885-EP-EPT		12882823.3	EP		7-Aug-2012	Memory access control for executable locking for Wireless Memory
78885	78885-US-PCT	9798695	14/414,875	US	24-Oct-2017	7-Aug-2012	Memory access control for executable locking for Wireless Memory
80189	80189-US-NP	9367938	13/780843	US	14-Jun-2016	28-Feb-2013	Automated real-time detection of overlapping painted HTML elements
81616	81616-US-NP		13/875,419	US		2-May-2013	Distance based mixing level control of distributed microphones
83827	83827-US-NP	9432854	14/026,245	US	30-Aug-2016	13-Sep-2013	Method for Avoiding Interference from Overlapping BSs in Content-on-Free Periods
83827	83827-DE-EPA	602014008695.0	14180002.9	DE	19-Apr-2017	6-Aug-2014	Method for Avoiding Interference from Overlapping BSs in Content-on-Free Periods
84861	84861-US-NP		14/193,689	US		28-Feb-2014	Methods using 3D model with a beacon for automatic goods delivery
85334	85334-US-NP		14/188,745	US		25-Feb-2014	Stretchable clip for accessory lenses of mobile handsets
86547	86547-US-PCT		15/525,562	US		13-Nov-2014	Direction capability using Bluetooth Low Energy Tags
86547	86547-KR-PCT		2017-7016025	KR		13-Nov-2014	Direction capability using Bluetooth Low Energy Tags
86547	86547-CN-PCT		201480084544.9	CN		13-Nov-2014	Direction capability using Bluetooth Low Energy Tags

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Familt	Case Reference	Patent Number	Application Number	Country	Grant Date	Application Date	Title
80547	80547-EP-EPPT	14905705.1	EP		13-Nov-2014	Direction capability using Bluetooth Low Energy Tags	
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200113585	2001PI13585WEDE	50213995.1	02772238.8	DE	11-Nov-2009	30-Aug-2002	VERFAHREN ZUR ÜBERTRAGUNG VON SIGNALTÖnen IN HETEROGENEN NETZEN, VORRICHTUNG UND COMPUTERPROGRAMMPRODUKT
200113585	2001PI13585WEGB	1438823	02772238.8	GB	11-Nov-2009	30-Aug-2002	VERFAHREN ZUR ÜBERTRAGUNG VON SIGNALTÖnen IN HETEROGENEN NETZEN, VORRICHTUNG UND COMPUTERPROGRAMMPRODUKT
200113585	2001PI13585WEIE	1438823	02772238.8	IE	11-Nov-2009	30-Aug-2002	IN HETEROGENEN NETZEN, VORRICHTUNG UND COMPUTERPROGRAMMPRODUKT
200298020	2002P98020WOCN	398462	03803051.9	CN	28-May-2008	31-Jan-2003	INFORMATION TRANSFER METHOD, INFORMATION TRANSFER SYSTEM, AND BASE STATION
200401338	2004P01338WEBE	1709803	05701481.3	BE	1-Dec-2010	11-Jan-2005	VERTELUNG VON KURZNACHRICHten MITELS EINER VIDEO CONTROL ENRICHTUNG
200401338	2004P01338WEDE	50 2005 010 614.8	05701481.3	DE	1-Dec-2010	11-Jan-2005	VERTELUNG VON KURZNACHRICHten MITELS EINER VIDEO CONTROL ENRICHTUNG
200401338	2004P01338WEFR	1709803	05701481.3	FR	1-Dec-2010	11-Jan-2005	VERTELUNG VON KURZNACHRICHten MITELS EINER VIDEO CONTROL ENRICHTUNG
200401338	2004P01338WEGB	1709803	05701481.3	GB	1-Dec-2010	11-Jan-2005	VERTELUNG VON KURZNACHRICHten MITELS EINER VIDEO CONTROL ENRICHTUNG
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200402733	2004P02733WEEES	1719367	05707022.0	ES	12-Dec-2007	2-Feb-2005	Mehrfläche Verwendung einer standardisierten Schnittstelle in einer Vorrichtung
200402733	2004P02733WEFR	1719367	05707022.0	FR	12-Dec-2007	2-Feb-2005	Mehrfläche Verwendung einer standardisierten Schnittstelle in einer Vorrichtung
200498050	2004P98050WOCN	503670	200580010493.6	CN	3-Jun-2009	5-Apr-2005	BASEBAND MODULE AND DATA TRANSMISSION METHOD
42011B	42011B-US-NP	7353048	10/323822	US	1-Apr-2008	20-Dec-2002	TRANSFORMER HINGE DESIGN

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